What is claimed is:

1. A high frequency power amplifier electric part comprising:

a power amplification circuit of a multi-stage configuration in which a plurality of transistors for amplification are cascaded, which amplifies an input high frequency signal and outputs the amplified signal;

a transistor for output level detection, which receives an input signal of a transistor for amplification in the final stage of the power amplification circuit; and

a bias generating circuit for applying a bias to said power amplification circuit in accordance with current of the transistor for output level detection,

wherein said bias generating circuit includes:

a resistive element connected between an input terminal of said transistor for amplification in the final stage and an input terminal of said transistor for output level detection;

a current-voltage converting means for converting current detected by said transistor for output level detection into a voltage; and

an error amplifier for outputting voltage according to a potential difference between the voltage converted by the current-voltage converting means and voltage instructing an output level from the outside,

a resistance value of said resistive element is set to a value so that an AC component of an input signal of said transistor for amplification can be transmitted,

said transistor for output level detection passes current according to a DC component and an AC component of an input signal of said transistor for amplification in the final stage, and

an output of said error amplifier is fed back to an input side of said transistor for amplification in the final stage.

2. The high frequency power amplifier electric part according to claim 1, wherein the resistance value of said resistive element is 100Ω or less.

3. The high frequency power amplifier electric part according to claim 1, wherein an output of said error amplifier is fed back to an input side of said transistor for amplification in the final stage via a second resistive element.

4. The high frequency power amplifier electric part according to claim 1,

wherein said bias generating circuit comprises:

a transistor for detection for receiving an input signal of a transistor for amplification in a stage preceding the

final stage;

second current-voltage converting means for converting current of the transistor for detection; and

a second error amplifier for outputting voltage according to a potential difference between the voltage obtained by the conversion of the second current-voltage converting means and reference voltage, and

wherein an output of the second error amplifier is fed back to the input side of the transistor for amplification in a stage preceding the final stage.

5. The high frequency power amplifier electric part according to claim 4, wherein the voltage obtained by conversion of said current-voltage converting means is applied as said reference voltage to said second error amplifier.

6. The high frequency power amplifier electric part according to claim 4, further comprising a current mirror circuit for passing current proportional to current of said transistor for output level detection,

wherein the current mirror circuit has a first transistor for generating a first transfer current and a second transistor for generating a second transfer current,

wherein the voltage obtained by converting said first

transfer current by said current-voltage converting means is applied to said error amplifier, and

wherein the voltage obtained by converting said second transfer current by said current-voltage converting means is applied as a reference voltage to said second error amplifier.

7. The high frequency power amplifier electric part according to claim 1,

wherein said power amplifier is constructed by cascading three or more transistors for amplification, and

wherein, in correspondence with each of the transistors for amplification, there are provided:

a transistor for detection which receives an input signal via a resistive element;

a current mirror circuit for passing current proportional to current of the transistor;

current-voltage converting means for converting current transferred from the current mirror circuit to voltage; and

an error amplifier for outputting voltage according to a potential difference between voltage obtained by conversion of the current-voltage converting means and a reference voltage and feeding back the output to an input side of the corresponding transistor for amplification.

8. The high frequency power amplifier electric part

according to claim 4,

wherein the transistor for amplification in the first stage of said power amplifier is a field effect transistor in which two gate electrodes are provided in series between a drain region and a source region in correspondence with one channel region and has a resistor dividing circuit for passing current according to an output of said second error amplifier, and

wherein first voltage generated by the resistor dividing circuit is applied to the input side of the first gate electrode of said field effect transistor, and second voltage generated by said resistor dividing circuit is applied to the input side of the second gate electrode of said field effect transistor.

9. A high frequency power amplifier electric part comprising:

a power amplification circuit of a multi-stage configuration in which a plurality of transistors for amplification are cascaded, which amplifies an input high frequency signal and outputs the amplified signal; and

a bias generating circuit for applying a bias to each of the transistors for amplification of the power amplification circuit,

wherein said bias generating circuit includes:

a first transistor for detection, which receives an input

signal of a transistor for amplification in the final stage via a first resistive element;

a first current-voltage converting means for converting current detected by the first transistor for detection into a voltage;

a first error amplifier for outputting voltage according to a potential difference between the voltage converted by the first current-voltage converting means and reference voltage;

a second transistor for detection, which receives an input signal of a transistor for amplification in a stage preceding the final stage via a second resistive element;

a second current-voltage converting means for converting current detected by the second transistor for detection into a voltage; and

a second error amplifier for outputting voltage according to a potential difference between the voltage converted by the second current-voltage converting means and voltage indicative of an output level from the outside,

wherein a resistance value of said resistive element is set to a value so that an alternate current component of an input signal of said transistor for amplification in said preceding stage can be transmitted,

wherein said second transistor for detection passes current according to a DC component and an AC component of

an input signal of a transistor for amplification in said preceding stage,

wherein an output of said second error amplifier is fed back to an input side of a transistor for amplification in a stage preceding the final stage,

wherein the voltage converted by said second current-voltage converting means is applied as a reference voltage to said first error amplifier, and

wherein an output of the first error amplifier is fed back to the input side of said transistor for amplification in the final stage.

10. The high frequency power amplifier electric part according to claim 9, further comprising a current mirror circuit for passing current proportional to current of said second transistor for detection,

wherein the current mirror circuit comprise a first transistor for generating first transfer current, and a second transistor for generating second transfer current,

wherein voltage obtained by converting said first transfer current by said second current-voltage converting means is applied to said second error amplifier, and

wherein voltage obtained by converting said second transfer current by said current-voltage converting means is applied as a reference voltage to said first error amplifier.

11. A radio telecommunication system comprising:

a high frequency power amplifier electric part according to claim 1 ;

a second electronic part having a transmission/reception switching circuit for switching between a transmission signal and a reception signal;

a third electronic part for modulating a signal to be transmitted and inputting the modulated signal to said high frequency power amplifier electronic part; and

a semiconductor integrated circuit for applying voltage instructinganoutputleveltosaidhighfrequencypoweramplifier electric part.